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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,233	10/31/2003	Chihaya Adachi	10020/18103	2304
26646 7590 12/16/2008 KENYON & KENYON LLP ONE BROADWAY NEW YORK, NY 10004				
EXAMINER YAMNITZKY, MARIE ROSE				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
12/16/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/698,233

**Applicant(s)**

ADACHI ET AL.

**Examiner**

Marie R. Yamnitzky

**Art Unit**

1794

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 39, 41-50 and 52-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 39, 41-50 and 52-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 30, 2008 has been entered.

Claims 39, 41-50 and 52-60 are pending.

2. Claims 39, 41-50 and 52-60 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement for reasons of record in the Office action mailed November 01, 2007.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 39 and 50 stand rejected under 35 U.S.C.102(b) as being anticipated by Baldo et al. in *Nature*, Vol. 395, pp. 151-154 (September 10, 1998) as evidenced by applicant's arguments filed August 09, 2007, for reasons of record in the Office action mailed November 01, 2007.

5. Applicant's arguments filed October 30, 2008 have been fully considered but they are not persuasive.

Applicant argues that one of ordinary skill in the art would be familiar with techniques used to determine HOMO, LUMO and triplet energies of a material, and therefore determining these values for particular materials would not constitute undue experimentation.

Applicant further argues that the examiner has not identified any limitation that lacks enablement. Applicant argues that the fact that certain embodiments disclosed in the application may not meet all the recited claim elements does not provide an adequate basis for the rejection under 35 U.S.C. 112, first paragraph, when methods for determining the recited properties are routine in the art.

The limitation that lacks enablement is the limitation of a combination of phosphorescent dopant material and an electron transporting host material that meets all the energy relationships set forth in independent claims 39 and 50 (i.e. the relationship between HOMO of the dopant and  $I_p$  of the host, the relationship between LUMO of the dopant and LUMO of the host, and the relationship between the triplet state energy of the dopant and the triplet state energy of the host). While the specification describes exemplary hosts and exemplary dopants, the exemplary hosts and dopants provide combinations that meet only two of the three energy relationships required by the present claims. The specification provides insufficient guidance with respect to combinations of materials that meet all three energy relationships. Note that the present specification does not disclose the actual values for the HOMO, LUMO or triplet energy of any of the disclosed phosphorescent dopant materials, and does not disclose the actual values for the

Ip, LUMO or triplet energy of any of the disclosed electron transporting host materials. The fact that combinations of dopant and host materials disclosed in the specification do not meet all the energy relationships of the present claims was determined through other sources as described in the rejection as set forth in the Office action mailed November 01, 2007.

While the present specification describes the concept of the presently claimed device, the specification provides no examples of specific materials that can be used in combination to provide a device meeting the limitations of the presently claimed device. The question is not whether one of ordinary skill in the art would be capable of measuring LUMO and HOMO values of materials, the question is whether one of ordinary skill in the art at the time of the invention would be able to make the invention commensurate in scope with the present claims without undue experimentation. One of ordinary skill in the art at the time of the invention, looking to the specification for guidance, would reasonably presume that at least some materials disclosed in the specification could be used in combination to provide the device of the present claims, but no specific examples are provided that clearly meet all the limitations with respect to the specified relationships between the various properties. Since there are a large number of materials from which the dopant and host materials can potentially be selected, and there is a lack of guidance with respect to any specific combinations of materials that actually meet the required relationships, the examiner maintains the position that the present claims are not enabled.

With respect to the rejection under 35 U.S.C. 102(b), applicant argues that the triplet energy values reported by Lamansky et al. (US 2002/0182441) for PtOEP and Alq<sub>3</sub> are not

1.9eV and 2.0eV, respectively, but are  $1.9 \pm 0.1$  eV and  $2.0 \pm 0.1$  eV. Applicant argues that therefore, within the experimental error, these values cannot be distinguished and the triplet energy of PtOEP may actually be greater than the triplet energy for Alq<sub>3</sub>. Applicant argues that within the limits of the measurement technique, the triplet energy of PtOEP and Alq<sub>3</sub> are the same.

The present claims place no limitation on the difference between the triplet state energy between the phosphorescent dopant material and the electron transporting host material beyond the requirement that the dopant material have a triplet excited state with a triplet state energy that is less than that of the host material. A dopant material having a triplet state energy that is a fraction of an eV less than the triplet state energy of a host material meets the relative triplet state energy limitation of claims 39 and 50. The first full paragraph on page 7 of the specification teaches a difference in triplet values of at least about 0.1eV between triplet host and triplet dopant, though the present claims don't even require that much of a difference between triplet values. There is no limitation as to how the triplet state energy must be measured. If under the same measurement conditions, the triplet state energy of the dopant material PtOEP is measured to be 1.9eV, and the triplet state energy of the electron transporting host material Alq<sub>3</sub> is measured to be 2.0eV, this combination of materials meets the triplet state energy relationship required by present independent claims 39 and 50.

Art Unit: 1794

6. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 7:00 a.m. to 3:30 p.m. Monday-Friday.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

/Marie R. Yamnitzky/  
Primary Examiner, Art Unit 1794

MRY  
December 15, 2008